



NCTIP

**National Center for Transportation and Industrial Productivity
New Jersey Institute of Technology**

To: Nick Vitillo

Title: NCTIP Quarterly Reports

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Quarterly Progress Report

Project Title:	Alternate Performance Measures for Evaluating Congestion		
RFP Number: 2001-20	NJDOT Research Project Manager: Nancy Ciaruffoli		
Task Order Number/Study Number: NCTIP-41	Pincipal Investigator: Rowinski, Jakub P		
Period Starting: 01/01/2002 - 03/31/2003 (Start-End Date of Study)	Period Ending: 12/19/2002		

Task	% of Total	% of Task this quarter	% of Task to date	% of Total Complete
Task 1.1 Literature Search	8	0	100	8
Task 1.2 Literature Search Presentation	8	0	100	8
Task 2.1 Current Congestion Data	8	0	20	2
Task 2.2 Existing Performance Data	8	0	20	2
Task 2.3 Existing Congestion Baseline	16	5	55	8.8
Task 2.4 Labor and Industry Data	8	40	90	7.2
Task 2.5 Determine Costs of Congestion	16	0	20	3
Task 2.6 Study Program Effectiveness	12	0	0	0
Task 2.7 Quarterly Progress and Final Report	8	0	50	4
Task 3.1 Demonstration/Initial Training	4	0	0	0
Task 3.2 Follow-up Training Session	4	0	0	0
Final Report				
TOTAL	100 %			43 %

1. Progress this quarter by task:

Phase 2 – Research approach

Task 2.3 Determine existing congestion level baseline with feedback from focus groups

The web based survey was presented to NJDOT on 9/26 and some changes were suggested during this meeting. The changes were made and discussed at a follow-up meeting on 11/15. The web based survey should be finalized and ready for distribution by the end of December.

Task 2.4 Gather labor and industry data

The data collection continued and should be complete within the month.

2. Proposed activities for next quarter by task:

Phase 2 – Research approach

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Task 2.1: Research, collect and analyze current congestion data, methodology and practices

Task 2.2: Collect and analyze existing congestion performance measure data

Task 2.3: Determine an existing congestion level baseline with feedback from focus groups

Task 2.4: Gather labor and industry data to include employment and inflation, income, population costs/percentages

Task 2.5: Develop a program that will determine the costs of congestion

3. List of deliverables provided in this quarter by task (product date):

None

4. Progress on implementation and training activities:

None

5. Problems/proposed solutions:

None

6. Budget summary:

Total Project Budget (# Years)	1 Year	\$170,509.00
Total Project Expenditure to date		\$73,300.00
% of Total Project Budget Expended		42.99%
Task Order Number/ Study Number	1 Year	NCTIP-41
Current Task Order Budget (# of Years)		\$0.00
Actual Expenditure to Date Against Current Task Order		\$0.00
% of Current Task Order Budget Expended		0.00%

Quarterly Progress Report

Project Title:	Assess Impacts and Potential Benefits of Traffic Signal Priority for Buses		
RFP Number: 2000-28	NJDOT Research Project Manager: Nick Vitillo		
Task Order Number/Study Number: NCTIP-45	Principal Investigator: Daniel, Janice R.		
Period Starting: 1/02/002 - 06/30/02 (Start-End Date of Study)	Period Ending: 12/19/2002		

Task	% of Total	% of Task this quarter	% of Task to date	% of Total Complete
Phase I. Assemble, Review & Synthesize Literature	10%	35%	100%	10%
Task 1. Survey Existing Systems Using Priority	15%	50%	100	15%
Task 2. Identifying Promising Locations and Develop Plans	25%	50%	100	25%
Task 3. Assessment of Operational Plans	25%	80%	90	22.5%
Task 4. Prepare Reports	25%	15%	20%	5%
Final Report				
TOTAL	100 %			77. %

1. Progress this quarter by task:

During the fourth quarter, the research team has been involved in documenting what has been accomplished in the research. The literature review is continuing to be developed by Dr. Srinivasan. Dr. Daniel and Ed Lieberman have been working on fine tuning the simulation model for Broad Street. The research team intends to focus the development of operational test plans to Broad Street. Types of equipment available for implementing signal priority have been investigated. The experience of transit agencies with these equipment is being researched and the costs and capabilities of these technologies is being determined. In the original simulation model, only the AM peak hour volumes were available. Volumes in the PM peak hour is being requested from the City of Newark. The signal timings originally provided by the City of Newark showed poor performance and indicated that the signal timings provided may not be what is currently being used in the field. New signal timings were obtained from the field. These signal timings will be used in assessing the improvement of the arterial performance from existing conditions to conditions with signal priority.

2. Proposed activities for next quarter by task:

During the next quarter the researchers will complete a Draft Final Report. The intent of the research team is to have the completed draft final report by early in the first quarter. This draft final report will be distributed to the RSIP for review.

3. List of deliverables provided in this quarter by task (product date):

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None

4. Progress on implementation and training activities:

None

5. Problems/proposed solutions:

None

6. Budget summary:

Total Project Budget (# Years)	1 Year	\$281,008.00
Total Project Expenditure to date		\$27,945.00
% of Total Project Budget Expended		9.94%
Task Order Number/ Study Number	1 Year	NCTIP-45
Current Task Order Budget (# of Years)		\$138,109.00
Actual Expenditure to Date Against Current Task Order		\$27,945.00
% of Current Task Order Budget Expended		20.23%

Quarterly Progress Report

Project Title:	Causes and Control of Transverse Cracking in Concrete Bridge Deck		
RFP Number: 1999	NJDOT Research Project Manager: Raj Chawla and Tony Chmiel		
Task Order Number/Study Number: NCTIP-30	Principal Investigator: Saadeghvaziri, M. A.		
Period Starting: March 1, 200 - December 31 (Start-End Date of Study)	Period Ending: 12/19/2002		

Task	% of Total	% of Task this quarter	% of Task to date	% of Total Complete
Literature search	12	0	100	12
Database/survey	26	0	100	26
In-field Measurement	10	20	100	8
Developmet of FEM	12	0	100	12
FEA	24	10	100	24
Design recommendation	10	10	100	10
Reports	6	20	100	6
Final Report				
TOTAL	100 %			10 %

1. Progress this quarter by task:

Final report reviewed and approved.
TechBrief completed and reviewed by NJDOT.

2. Proposed activities for next quarter by task:

Distribute final report.

3. List of deliverables provided in this quarter by task (product date):

Draft final report.

4. Progress on implementation and training activities:

5. Problems/proposed solutions:

6. Budget summary:

Total Project Budget (# Years)	2 Year	\$172,794.00
Total Project Expenditure to date		\$149,656.00
% of Total Project Budget Expended		86.61%
Task Order Number/ Study Number	2 Year	NCTIP-30
Current Task Order Budget (# of Years)		\$172,794.00
Actual Expenditure to Date Against Current Task Order		\$149,656.00
% of Current Task Order Budget Expended		86.61%

Quarterly Progress Report

Project Title:	Computer Modeling and Simulation of New Jersey Signalized Highways		
RFP Number: 2001-01	NJDOT Research Project Manager: Karl Brodtman, NJDOT		
Task Order Number/Study Number: 32	Principal Investigator: Chien, Steven I-Jy		
Period Starting: 1/1/02 - 12/31/03 (Start-End Date of Study)	Period Ending: 12/19/2002		

Task	% of Total	% of Task this quarter	% of Task to date	% of Total Complete
Review of Literature and Current Practice	4	5	100	3.8
Prototype Development	10	0	95	9.5
Site Identification and Data Collection Needs	10	0	100	10
Data Collection	15	0	100	15
Network Modeling with SYNCHRO and CORSIM	15	5	50	7.5
Optimization of Signal Timing Plan with SYNCHRO and CORSIM	20	20	30	6
Generation of Traffic Signal Directives	10	0	0	0
Development of Tutorial for the NJDOT Engineers in the SYNCHRO Environment	8	0	0	0
Final Report with Documentation of SYNCHRO Models	8	0	10	0.8
Final Report				
TOTAL	100 %			52. %

1. Progress this quarter by task:

1. Louis Berger Associates provided traffic volume for Route 42/322. A full package of data including manual turning movements counts and intersection sketches were provided. 2. Traffic volume data for the Route 23 Corridor was entered into Synchro computer software. NJDOT was provided with a copy of the output results to verify the accuracy of the traffic signal timing data. NJDOT has been provided with a CD of the Route 23 network output. The simulation will be field verified by NJDOT.

2. Proposed activities for next quarter by task:

1. Verify results from SYNCHRO output for Route 23. Optimize the Route 23 network and develop revised timing plans. Include recommendations for traffic signal timing and phasing enhancements. 2. Commence data input for the Route 42/322 corridor.

3. List of deliverables provided in this quarter by task (product date):

Draft Literature Review
SYNCHRO 5.0 Networks for various time periods

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4. Progress on implementation and training activities:

none yet

5. Problems/proposed solutions:

none yet

6. Budget summary:

Total Project Budget (# Years)	2 Year	\$149,585.00
Total Project Expenditure to date		\$82,300.00
% of Total Project Budget Expended		55.02%
Task Order Number/ Study Number	1 Year	32
Current Task Order Budget (# of Years)		\$149,585.00
Actual Expenditure to Date Against Current Task Order		\$82,300.00
% of Current Task Order Budget Expended		55.02%

Quarterly Progress Report

Project Title:	Concrete Maturity Meter Implementation		
RFP Number:	NJDOT Research Project Manager: Anthony Chmiel		
Task Order Number/Study Number: TO-26	Principal Investigator: Luke, Allyn C.		
Period Starting: 1/1/2001 - 12/31/2002 (Start-End Date of Study)	Period Ending: 12/19/2002		

Task	% of Total	% of Task this quarter	% of Task to date	% of Total Complete
Draft Materials Procedure for Maturity	5		50	2.5
Major Maturity Workshop	10		100	10
Maturity Lab Workshop	15		100	15
Field Training	20		75	15
Maturity Lab Testing	20		50	10
Reports	20		75	15
Field Results Analysis & Presentation	10		50	5
Final Report				
TOTAL	100 %			99 %

1. Progress this quarter by task:

All is complete except for some editing of the final report.

2. Proposed activities for next quarter by task:

Post project presentation to NJDOT

3. List of deliverables provided in this quarter by task (product date):

Laboratory Workshops

4. Progress on implementation and training activities:

All involved personnel have been acquainted with major concepts and tools for using the maturity method

5. Problems/proposed solutions:

6. Budget summary:

Total Project Budget (# Years)	Year	\$97,719.00
Total Project Expenditure to date		\$62,956.00
% of Total Project Budget Expended		64.43%
Task Order Number/ Study Number	Year	TO-26
Current Task Order Budget (# of Years)		\$97,719.00
Actual Expenditure to Date Against Current Task Order		\$34,763.00
% of Current Task Order Budget Expended		35.57%

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Project Title:	Development of a Simulation/Assignment Model for an ITS Priority Corridor in New Jersey		
RFP Number: 1999-27	NJDOT Research Project Manager: Karl Brodtmat, NJDOT		
Task Order Number/Study Number: NCTIP-32	Principal Investigator: Chien, Steven I-Jy		
Period Starting: 03/01/2001 - 05/31/2003 (Start-End Date of Study)	Period Ending: 12/19/2002		

Task	% of Total	% of Task this quarter	% of Task to date	% of Total Complete
Corridor Identification and Modeling Needs	9	0	100	9
Review of Existing Data Sources and Identification of Additional Data Needs	7	5	100	7
Modification of VISTA Simulation and Routing Models	12	5	100	11.4
Data Conversion and Input into the VISTA DB	6	5	100	6
Validation and Testing of the VISTA Simulation and Routing Models; Performance	6	5	100	6
Development of Two Tutorials and Training of the NJDOT Engineers in the VISTA environment	4	5	100	4
First Year Report with Documentation of the Simulation and Routing Models	4	5	100	4
Improvements to the Simulation and Routing Models based on the outcome of Task 6	16	50	100	16
Development of a Cost/Benefit Analysis Module for the NJDOT ITS Priority Corridor	16	10	10	1.6
Additional Data Needs and Conversion to the VISTA DB	4	80	80	3.2
Validation and Testing of the Cost/Benefit Analysis Module	6	10	10	0.6
Final Report, Enhancement of the Tutorial and Training	5	50	50	2.5
Final Report	5	10	10	0.5
TOTAL	100 %			71. %

1. Progress this quarter by task:

1. This work of fine tuning and improving the VISTA network has been done. The resolution of current VISTA version has been greatly improved. The fine tuned version will be used for training tutorial/workshop.
2. A new DTA matrix has been calibrated based on this new data collected from (NJDOT, NJTPA, NJTransit, NJ Highway Authority, PANYNJ, and New jersey Turnpike. A new DTA assignment has been developed.
3. Several case studies have been developed for the 2nd training workshop,

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which include work zone study, weather condition study, air pollution study, bus preemption study, and VMS study.

4. Deliver the 2nd training workshop at NJIT. The training materials have been developed and distributed to all attendees. A copy of the training materials will be delivered to NJDOT at the quarterly report meeting.

2. Proposed activities for next quarter by task:

1. Preparing an additional workshop for NJDOT engineers.
2. developing modules for cost/benefit analysis.
3. Study the feasibility to incorporate the Lincoln Tunnel into the VISTA model. This is in conjunction with the project sponsored by the Great Cities University Consortium (CCNY-CUNY), the TIDE center (NJIT).

3. List of deliverables provided in this quarter by task (product date):

Deliver the second training tutorial/workshop of VISTA at NJIT.

Deliver the train materials and report

4. Progress on implementation and training activities:

Propose additional tutorial at NJDOT

Developing Cost/Benefit Analysis Module

5. Problems/proposed solutions:

Few NJDOT engineers attend the 2nd tutorial. The research team plan to give an additional tutorial at NJDOT headquarter.

6. Budget summary:

Total Project Budget (# Years)	2 Year	\$375,100.00
Total Project Expenditure to date		\$269,400.00
% of Total Project Budget Expended		71.82%
Task Order Number/ Study Number	2 Year	NCTIP-32
Current Task Order Budget (# of Years)		\$375,100.00
Actual Expenditure to Date Against Current Task Order		\$269,400.00
% of Current Task Order Budget Expended		71.82%

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Project Title:	Economic & Quality of Life Impacts of Rt 21 Freeway Construction		
RFP Number: 2001-08	NJDOT Research Project Manager: R Sasor		
Task Order Number/Study Number: NCTIP-034	Principal Investigator: Golub, Eugene		
Period Starting: 01/01/2002 - 12/31/2006 (Start-End Date of Study)	Period Ending: 12/19/2002		

Task	% of Total	% of Task this quarter	% of Task to date	% of Total Complete
	3	0	100	3
	4	0	100	4
	4	25	100	4
	4	0	100	4
	4	25	100	4
	75	5	20	15
	3	90	90	2.7
	3	6	20	0.6
Final Report				
TOTAL	100 %			37. %

1. Progress this quarter by task:

Phase1 The literature search is complete.

Task3 Familiarization with CSD is almost complete. Additional work includes discussion with other NJDOT personnel as to how CSD was applied on this project.

Task2 Familiarization with the Rt 21 design and Baseline Data is complete. The NJDOT data has been obtained and has been reviewed. Additional data is being developed from other local and County Sources.

Task4 The project team has completed review of NJDOT 2001 baseline data.

Task5 A photographic record of the project has been undertaken and is near completion. It includes photoscapes of the area in proximity of the project as well as photos of the areas thought to be of importance by the NJDOT. these records are compiled on CD's.

Professional staff from both communities were individually interviewed and a compilation is being developed. Further, the local merchant associations have likewise been interviewed.

Surveys have been sent to elected officials & professional staff in both municipalities. Individual surveys are being conducted with merchants in both

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municipalities.

Traffic counts are being conducted at key intersections as per NJDOT original studies.

Noise readings are being taken at key locations as per original NJDOT studies.

Data is being compiled for Clifton on all sales of properties and the variation in prices as well as the total assessed valuation of the town for the last 10 years. Similar data has been requested from Passaic.

Accident data in the two towns is in the process of being developed to demonstrate changes that have occurred in the last few years.

Additional photography has been taken at important locations.

Base photographic record is being digitized for a permanent record that is easily organized.

We are obtaining sales reports from City of Passaic.

Surveys have been digitized and analyzed.

An interim annual report has been submitted in draft form.

2. Proposed activities for next quarter by task:

The second year analysis and data gathering will be undertaken. Interim report will be finalized after receipt of comments.

3. List of deliverables provided in this quarter by task (product date):

4. Progress on implementation and training activities:

5. Problems/proposed solutions:

6. Budget summary:

Total Project Budget (# Years)	5 Year	\$293,327.00
Total Project Expenditure to date		\$0.00
% of Total Project Budget Expended		0.00%
Task Order Number/ Study Number	1 Year	NCTIP-034
Current Task Order Budget (# of Years)		\$0.00
Actual Expenditure to Date Against Current Task Order		\$0.00
% of Current Task Order Budget Expended		0.00%

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Project Title:	Effectiveness of Bus Nubs for Bus Stops		
RFP Number: 2000-25	NJDOT Research Project Manager: Vincent Nichnadowicz		
Task Order Number/Study Number: NCTIP-43	Principal Investigator: Daniel, Janice R.		
Period Starting: 1/02/02 - 12/31/03 (Start-End Date of Study)	Period Ending: 12/19/2002		

Task	% of Total	% of Task this quarter	% of Task to date	% of Total Complete
Task A. Perform a literature review.	5%	55%	100%	5%
Task 1. Identify a limited number of urban bus stop locations that could be considered for bus nub installation.	10%	70%	100	10%
Task 2. Develop from the literature or elsewhere a specification document that provides measurements and guidance for proposed test bus nubs to be built.	10%	45%	75	7.5%
Task 3. Prepare plans in sufficient detail for the agreed upon test nubs to allow for contractor installation.	5%	50%	70	3.5%
Task 4. Develop a methodology to evaluate effectiveness of the alternate	5%	60%	90	4.5%
Task 5. Conduct a before data collection	10%	0%	2%	0.2%
Task 6. Install bus nubs.	20%	0%	0%	0%
Task 7. Conduct an after data collection.	10%	0%	0%	0%
Task 8. Analyze the data.	10%	0%	0%	0%
Task 9. With the assistance of NJDOT and NJ Transit, develop for general publication a document explaining the rules and guidelines for the use of	5%	0%	0%	0%
Task 10. Prepare a project schedule to submit a quarterly, interim and final report that document the entire research effort.	10%	10%	20%	2%
Final Report				
TOTAL	100 %			32. %

1. Progress this quarter by task:

During the past quarter the research team first met with Ken Stevenson and Paul Spiegel on September 13th. At this meeting a representative from the Teaneck Streetscapes project attended and provided information on the bus nubs to be constructed on Cedar Lane in Teaneck. At this meeting, it was agreed that a before/after study would be performed at these bus nubs. It was also agreed that the research team would contact other streetscapes projects to determine if they are considering bus nubs and to inquire about the possibility of including a bus nub in the streetscape projects. The research team met with

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the Local Aid Office in Newark and received contact information from several municipalities at the beginning stage of their plans who may have some interest in the bus nubs. The research team then contacted: Plainfield, Maplewood, Clifton, Bloomingdale, and South Orange. All municipalities contacted requested further information on the bus nubs. After the project manager was changed, the focus of the research was also changed. The research team will now solely perform a before/after study of Cedar Lane in Teaneck where bus nubs will be constructed. The research team will also investigate the possibility of including bus nubs on Ferry Street in Newark. Only locations where no drainage construction is required will be considered.

2. Proposed activities for next quarter by task:

During the next quarter the research team will perform a before study on Cedar Lane. Ferry Street will be revisited to possibly identify bus stops where bus nubs can be constructed without affecting drainage. The research team will complete any outstanding Technical Memorandums.

3. List of deliverables provided in this quarter by task (product date):

None

4. Progress on implementation and training activities:

None

5. Problems/proposed solutions:

The research team has been told to only consider locations where the bus nub can be constructed with no consideration for drainage. The research team was encouraged by the original Project Manager to contact municipalities receiving Transportation Enhancement grants to determine their willingness to consider including a bus nub in their streetscape projects. The research team has been told by the current Project Manager that this approach will not work. This is based on his discussions with others. It is unclear whether the research team should proceed with contacting municipalities receiving local aid to determine their interests and/or willingness to consider bus nubs in their streetscape projects.

6. Budget summary:

Total Project Budget (# Years)	2 Year	\$118,785.00
Total Project Expenditure to date		\$49,627.00
% of Total Project Budget Expended		41.78%
Task Order Number/ Study Number	1 Year	NCTIP-43
Current Task Order Budget (# of Years)		\$62,906.00
Actual Expenditure to Date Against Current Task Order		\$49,627.00
% of Current Task Order Budget Expended		78.89%

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Project Title:	Evaluation of design ideas for prevention of vehicles entrapment on railroad tracks due to improper left turns		
RFP Number: 31	NJDOT Research Project Manager: Karl Brodtman, NJDOT		
Task Order Number/Study Number: NCTIP-31	Principal Investigator: Jeng, One-Jang		
Period Starting: 4/1/2000 - 12/31/2002 (Start-End Date of Study)	Period Ending: 12/19/2002		

Task	% of Total	% of Task this quarter	% of Task to date	% of Total Complete
Review and analysis of literature and accident reports	10	100	100	10
Setup of laboratory equipment	5	100	100	5
Conduct pilot experiments	5	100	100	5
Conduct formal experiments	20	100	100	20
Perform data processing and statistical analysis	10	100	100	10
Selection and modification of design ideas	10	100	100	10
Setup of design prototypes for field studies	10	100	100	10
Conduct pilot experiments for field studies	10	100	100	10
Conduct formal experiments for field studies	10	50	50	5
Perform data processing and statistical analysis	10	50	50	5
Final Report				
TOTAL	100 %			90. %

1. Progress this quarter by task:

Karl Brodtman provided a NJDOT letter for Dr. Jeng to the Hackensack Police Department for notification about the field study. Dr. Jeng met with Lieutenant Carroll in October to obtain the approval for the field study. The field study project was well accepted by the Hackensack PD. The before treatment video recording took place in October immediate after the approval. Four recordings, which consists of day time, night time, peak hours, and off-peak hours, were taken at four different times for each of the three selected sites.

Dr. Jeng met with John Vogler and staff from the Signal and Control Division of NJTransit in November and gave a presentation to go over the design specification for the field study. The specifications were approved for field study. It was scheduled to implement the design treatment at end of November to first week of December. It was estimated to be a one-to-two day job. Due to weather condition the contractor has not been able to finish the painting job. Mr. Vogler has informed Dr. Jeng that the contractor would estimate the task on site on Dec. 16.

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2. Proposed activities for next quarter by task:

The video recording will take place as soon as the painting job is completed.
The final report of the project is in preparation despite the delay of the painting job. The after-treatment data analysis and comparison with the before-treatment results will be integrated into the final report

3. List of deliverables provided in this quarter by task (product date):

4. Progress on implementation and training activities:

5. Problems/proposed solutions:

6. Budget summary:

Total Project Budget (# Years)	3 Year	\$146,884.00
Total Project Expenditure to date		\$145,108.00
% of Total Project Budget Expended		98.79%
Task Order Number/ Study Number	3 Year	NCTIP-31
Current Task Order Budget (# of Years)		\$69,920.00
Actual Expenditure to Date Against Current Task Order		\$68,754.00
% of Current Task Order Budget Expended		98.33%

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Project Title:	Fatigue Management, Rail Operations Personnel		
RFP Number: 36	NJDOT Research Project Manager: Karl Brodtman, NJDOT		
Task Order Number/Study Number: 36	Principal Investigator: Jeng, One-Jang		
Period Starting: 1/1/2002 - 8/31/2003 (Start-End Date of Study)	Period Ending: 12/19/2002		

Task	% of Total	% of Task this quarter	% of Task to date	% of Total Complete
Phase I iV Literature Search	5	100	100	5
Phase II iV Research Approach Task 1 iV Detailed Literature Search	10	100	100	10
Task 2 iV Presentation of Literature Findings	5	0	0	0
Task 3 iV Determine Existing HOS guidelines	25	15	15	3.75
Task 4 Prepare HOS model for Crew Schedule Assessment and Design Tool	30	0	0	0
Task 5 iV Prepare a Request for Proposal	15	0	0	0
Task 6 iV Reporting	10	12	12	1.2
Final Report				
TOTAL	100 %			20. %

1. Progress this quarter by task:

Circadian Technologies Inc. (CTI) has provided a list of relevant sources and other pertinent technical information in the areas of fatigue management. New Jersey Institute of Technology (NJIT) is preparing a literature report based on these sources. Alex Baker from New Jersey Transit (NJT) has provided CTI with the schedule assignments for the bid period beginning 27th October. CTI is in the process of converting these schedules into a format acceptable for the software that will determine the level of fatigue for each. NJT is also sending CTI copies of the Union contracts and NJT schedule rules. A preliminary draft of the survey that a cross-section of the conductors and engineers will complete has been delivered to NJT.

A questionnaire has been developed to better identify causes and factors associated with operator fatigue. The study team will be meeting with NJTransit upper management personnel as well as Union officials to discuss the content and administration of the survey.

2. Proposed activities for next quarter by task:

1. Prepare the Literature report for presentation as part of Task 2.
2. Complete scoring assignments for fatigue. Assess extra-board personnel for fatigue. Complete and administer survey.
3. Meet with NJTransit rail operations personnel.

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3. List of deliverables provided in this quarter by task (product date):

4. Progress on implementation and training activities:

5. Problems/proposed solutions:

6. Budget summary:

Total Project Budget (# Years)	2 Year	\$221,017.00
Total Project Expenditure to date		\$71,320.00
% of Total Project Budget Expended		32.27%
Task Order Number/ Study Number	1 Year	36
Current Task Order Budget (# of Years)		\$19,312.00
Actual Expenditure to Date Against Current Task Order		\$71,320.00
% of Current Task Order Budget Expended		369.30%

Quarterly Progress Report

Project Title:	Good Neighbor Privacy Fence		
RFP Number:		NJDOT Research Project Manager:	R Sasor
Task Order Number/Study Number: 2001-14		Principal Investigator:	Golub, Eugene
Period Starting: 01/01/2002 - 09/30/2003 (Start-End Date of Study)		Period Ending:	12/19/2002

Task	% of Total	% of Task this quarter	% of Task to date	% of Total Complete
phase 1	8	0	100	
1	8	5	65	5.2
2	15	0	100	
3	20	0	80	16
4	20	10	50	10
5	20	10	30	6
6	4	15	60	2.4
Final Report	5	40	40	2
TOTAL	100 %			41. %

1. Progress this quarter by task:

Project Progress: The literature search is complete.

Detailed information has been gathered on vinyl, concrete, fiberglass, steel, aluminum, block and landscape fences.

The team is also considering the approach of providing fencing on NJDOT property by providing an easement to the adjoining neighbor to select the type of fence from an approved list and then accepting responsibility for maintenance. This would allow for the use of landscape features that require routine maintenance that is then provided by the adjoining homeowner.

An interim annual report was written this quarter. This brought all of the information gathered in a single document. The various solutions studied were discussed in detail and identified as feasible or not feasible.

2. Proposed activities for next quarter by task:

The next quarter will focus on taking current products available in the market place and modify the basic designs to increase the life span of the product and reduce routine maintenance to the smallest level possible.

The idea of placing the privacy fence on the neighboring property will be explored with the AG's office.

3. List of deliverables provided in this quarter by task (product date):

Quarterly Progress Report

4. Progress on implementation and training activities:

5. Problems/proposed solutions:

6. Budget summary:

Total Project Budget (# Years)	Year	\$0.00
Total Project Expenditure to date		\$0.00
% of Total Project Budget Expended		0.00%
Task Order Number/ Study Number	Year	2001-14
Current Task Order Budget (# of Years)		\$0.00
Actual Expenditure to Date Against Current Task Order		\$0.00
% of Current Task Order Budget Expended		0.00%

Quarterly Progress Report

Project Title:	Identification of Factors and Mitigation Technologies in Truck Accidents in New Jersey		
RFP Number: N/A	NJDOT Research Project Manager: Ed Kondrath		
Task Order Number/Study Number: TO-30	Principal Investigator: Daniel, Janice R.		
Period Starting: 1/1/2001 - 10/30/2002 (Start-End Date of Study)	Period Ending: 12/19/2002		

Task	% of Total	% of Task this quarter	% of Task to date	% of Total Complete
Task 1. Review and analysis of statistical crash data	40%	12.5%	100%	40%
Task 2. Identify statistically significant factors in truck crashes	40%	12.5%	100%	40%
Task 3. Prepare case study	10%	0%	100%	10%
Task 4. Review existing technologies and strategies	10%	0%	100%	10%
Final Report				
TOTAL	100 %			10 %

1. Progress this quarter by task:

During the final quarter, the research team has been involved in addressing comments to the Draft Final Report. Comments still to be addressed include identifying the years of accidents for the data shown in the Tables and Charts of the report. An Appendix is also being compiled including pictures of the Case Study Locations and additional tables generated from the study.

2. Proposed activities for next quarter by task:

Any additional comments received from the RSIP on the Draft Final Report will be addressed.

3. List of deliverables provided in this quarter by task (product date):

None

4. Progress on implementation and training activities:

None

5. Problems/proposed solutions:

None

6. Budget summary:

Quarterly Progress Report

Total Project Budget (# Years)	2 Year	\$99,523.00
Total Project Expenditure to date		\$98,948.00
% of Total Project Budget Expended		99.42%
Task Order Number/ Study Number	2 Year	TO-30
Current Task Order Budget (# of Years)		\$99,523.00
Actual Expenditure to Date Against Current Task Order		\$98,948.00
% of Current Task Order Budget Expended		99.42%

Quarterly Progress Report

Project Title:	Improvement of Continuity Connections Over Fixed Piers		
RFP Number: 2000-23	NJDOT Research Project Manager: Tony Chmeil		
Task Order Number/Study Number: TO-27	Principal Investigator: Saadeghvaziri, M. A.		
Period Starting: 1/1/2001 - 12/31/2003 (Start-End Date of Study)	Period Ending: 12/19/2002		

Task	% of Total	% of Task this quarter	% of Task to date	% of Total Complete
Literature review	4	0	100	4
FEA work	21	10	86	18.06
Instrumentation/In-field measurements	21	0	100	21
Comparison/FEA	14	36	64	8.96
Recommendations for changes to existing design	9	0	100	9
Interim report	2	0	100	2
New connection	16	25	37.5	6
Laboratory tests	5	0	0	0
Specs.	5	0	0	0
Final report	3	0	0	0
Final Report				
TOTAL	100 %			69. %

1. Progress this quarter by task:

Route 1 & 9 (Section 2AG) field measurements completed.
 Conducted analytical evaluation of field measurements.
 Developed plan for laboratory tests.

2. Proposed activities for next quarter by task:

Finalize laboratory test plan and start experiments.
 Conduct additional analytical studies using both simple and finite element models.

3. List of deliverables provided in this quarter by task (product date):

4. Progress on implementation and training activities:

5. Problems/proposed solutions:

6. Budget summary:

Quarterly Progress Report

Total Project Budget (# Years)	3 Year	\$226,319.00
Total Project Expenditure to date		\$107,696.00
% of Total Project Budget Expended		47.59%
Task Order Number/ Study Number	2 Year	TO-27
Current Task Order Budget (# of Years)		\$152,376.00
Actual Expenditure to Date Against Current Task Order		\$107,696.00
% of Current Task Order Budget Expended		70.68%

Quarterly Progress Report

Project Title:	Pedestrian Safety and Mobility Aids for Crossings and Access to Bus Stops		
RFP Number: 42	NJDOT Research Project Manager: Nancy Ciaruffoli, NJDOT		
Task Order Number/Study Number: NCTIP-42	Principal Investigator: Jeng, One-Jang		
Period Starting: 1/1/2002 - 12/31/2002 (Start-End Date of Study)	Period Ending: 12/19/2002		

Task	% of Total	% of Task this quarter	% of Task to date	% of Total Complete
Task 1.1 Literature Search	10	0	100	10
Task 2.1 iV Develop Initial Criteria for Site Selection	10	0	100	10
Task 2.2 - Select Potential Candidate Sites	5	0	100	5
Task 2.3 - Perform Initial Evaluation	10	25	75	7.5
Tasks 2.4 - Recommend Final Locations	10	90	100	10
Task 2.5 Develop Innovative Solutions Strategies and Aids	20	5	25	5
Task 2.6 iV Perform Detailed Evaluation	20	10	10	2
Task 2.7 - Develop Implementation Plan	10	0	0	0
Task 2.8 Final Report	5	0	0	0
Final Report				
TOTAL	100 %			49. %

1. Progress this quarter by task:

The project team has selected two study locations for computer simulation, experimentation and integration and testing of potential mobility aids and strategies. Each of these locations has been videotaped and we are preparing a survey that will be administered in the next quarter. The study team has also obtained accident records for the entire Route 9 corridor and is reviewing these to identify specific pedestrian related problems.

2. Proposed activities for next quarter by task:

Finalize preparation of the on-site survey. This survey is intended to gain further insight on existing crossing deficiencies and behaviors and will be administered at the end of the next quarter. The study team will also be investigating night time conditions as well as crossing behaviors under adverse weather.

3. List of deliverables provided in this quarter by task (product date):

4. Progress on implementation and training activities:

5. Problems/proposed solutions:

6. Budget summary:

Quarterly Progress Report

Total Project Budget (# Years)	1 Year	\$114,510.00
Total Project Expenditure to date		\$46,768.00
% of Total Project Budget Expended		40.84%
Task Order Number/ Study Number	1 Year	NCTIP-42
Current Task Order Budget (# of Years)		\$114,510.00
Actual Expenditure to Date Against Current Task Order		\$46,768.00
% of Current Task Order Budget Expended		40.84%

Quarterly Progress Report

Project Title:	Project Management & Progress Tracking System (ProMPTS) - Maintenance and Improvement Contract + Extension: MOD1 + MOD2		
RFP Number: N/A	NJDOT Research Project Manager: Robert Sasor, NJDOT		
Task Order Number/Study Number: NCTIP-36	Principal Investigator: Tang, Chi		
Period Starting: 9/30/2001 - 9/30/2002 (Start-End Date of Study)	Period Ending: 12/19/2002		

Task	% of Total	% of Task this quarter	% of Task to date	% of Total Complete
Develop data database and ProMPTS application Version 2	30	0	100	30
Speed up operations and Prevent importing of duplicate records	5	100	100	5
Develop custom toolbar and tool tips on fields	1	100	100	1
Finish printing functions	4	100	100	4
Debugging and Testing	25	100	100	25
Other Improvements	10	80	90	9
Provide phone consultations for the NJDOT ProMPTS	5	100	100	5
Develop data database and ProMPTS application Version 3	10	100	90	9
Final Report	10	50	70	7
TOTAL	100 %			95. %

1. Progress this quarter by task:

Modifications and improvements on data entry forms and reports were made according to customer requirements; New forms and queries developed to meet additional customer specifications (e.g., Developed multiple criteria query capability on Project Information screen); New version 3.1 of ProMPTS delivered on December 18, 2002. This is the last quarter report for current task order.

2. Proposed activities for next quarter by task:

3. List of deliverables provided in this quarter by task (product date):

New version of Prompts (3.1) delivered.

4. Progress on implementation and training activities:

N/A

5. Problems/proposed solutions:

Need to approve new contract for maintenance and further improvements.

6. Budget summary:

Quarterly Progress Report

Total Project Budget (# Years)	2 Year	\$102,560.00
Total Project Expenditure to date		\$102,560.00
% of Total Project Budget Expended		100.00%
Task Order Number/ Study Number	2 Year	NCTIP-36
Current Task Order Budget (# of Years)		\$38,572.00
Actual Expenditure to Date Against Current Task Order		\$38,572.00
% of Current Task Order Budget Expended		100.00%

Quarterly Progress Report

Project Title:	Shoulder Rumble Strips and Bicyclists		
RFP Number:	NJDOT Research Project Manager: Karl Brodtman, NJDOT		
Task Order Number/Study Number: NCTIP-38	Principal Investigator: Daniel, Janice R.		
Period Starting: 1/1/2001 - 3/31/2003 (Start-End Date of Study)	Period Ending: 12/19/2002		

Task	% of Total	% of Task this quarter	% of Task to date	% of Total Complete
Perform a literature review.	65%	0%	100%	65%
Survey the SRS policies and practices of state DOTs.	20%	0%	100%	20%
Prepare problem statement.	5%	5%	100%	5%
Prepare quarterly progress and final report.	10%	20%	100%	10%
Final Report				
TOTAL	100 %			10 %

1. Progress this quarter by task:

During the past quarter the research team has continued to add sections to the Draft Final Report. Further analyses of the Run-off-Road Accident Study performed for the report were conducted. Additional conclusions and recommendations on rumble strip designs for NJ were included in the report.

2. Proposed activities for next quarter by task:

During the next quarter the research team anticipates responding to comments on the Draft Final Report and completing the Final Report for the project.

3. List of deliverables provided in this quarter by task (product date):

4. Progress on implementation and training activities:

5. Problems/proposed solutions:

6. Budget summary:

Total Project Budget (# Years)	Year	\$0.00
Total Project Expenditure to date		\$0.00
% of Total Project Budget Expended		0.00%
Task Order Number/ Study Number	Year	NCTIP-38
Current Task Order Budget (# of Years)		\$0.00
Actual Expenditure to Date Against Current Task Order		\$0.00
% of Current Task Order Budget Expended		0.00%

Quarterly Progress Report

Project Title:	Survey of Driver Perceptions of Railroad and Light Rail Warning Devices/Grade Crossings		
RFP Number: 2001-33	NJDOT Research Project Manager: Karl Brodtman		
Task Order Number/Study Number: NCTIP-33	Pincipal Investigator: Jeng, One-Jang		
Period Starting: 1/1/2002 - 12/31/2003 (Start-End Date of Study)	Period Ending: 12/19/2002		

Task	% of Total	% of Task this quarter	% of Task to date	% of Total Complete
Phase I-Literature Search: Conduct a literature search of the current state of the practice	10	100	100	10
Phase II-Research Approach: Task 1: Determine the various types of railroad and light rail highway grade crossings in New Jersey	5	100	100	5
Task 2: Conduct a survey of other states for information	10	100	100	10
Task 3a: Catalog the individual active and passive railroad/light rail crossing devices in New Jersey	5	75	75	3.75
Task 3b: Arrange the devices in groups that would be found at typical crossings as found in the classification system in Task 1	5	75	75	3.75
Task 4: Setup of laboratory experimental tasks, video and still image editing, programming for recording subject responses and data processing	15	50	50	7.5
Conduct a pilot study for the experiments; finalize experiment procedures	10	30	30	3
Conduct formal laboratory experiments	10	0	0	0
Perform data processing and statistical analysis for the laboratory experiments	10	0	0	0
Task 5: Technical Memorandum on the driver manual chapters, exam questions and answers	10	0	0	0
Task 6: Prepare and deliver the final report	10	0	0	0
Final Report				
TOTAL	100 %			43. %

1. Progress this quarter by task:

During the report quarter the research team has successfully integrated a joystick into the in-lab experiment programming for subjects to record their reactions upon viewing various passive and active traffic control devices for railroad crossings. Railroad crossing photos were processed for experimental design purposes. The team reviewed detail steps of the experimental procedure for the in-lab experiment and identified several areas of the programming to have some minor changes.

Quarterly Progress Report

A database (National Highway-Rail Crossing Inventory) published by the FHWA which contains detail descriptions of all railroad crossings for all states is being analyzed for its New Jersey part. The analysis will help to compare over 1,800 railroad crossings in New Jersey its treatment (including standard and non-standard passive and active traffic control devices). The analysis is near its completion. It is very useful to categorize all railroad crossings in New Jersey in terms of their equipment of traffic control devices.

2. Proposed activities for next quarter by task:

The team will utilize the New Jersey railroad crossing database to identify sites which show significantly differences in their traffic control devices. Field trips will be arranged to visit those sites to understand the layout of those crossings and review their traffic control devices. The research team will continue take make pictures from actual railroad crossing sites and retouch the pictures for the experiment.

3. List of deliverables provided in this quarter by task (product date):

4. Progress on implementation and training activities:

5. Problems/proposed solutions:

6. Budget summary:

Total Project Budget (# Years)	2 Year	\$161,158.00
Total Project Expenditure to date		\$46,182.00
% of Total Project Budget Expended		28.66%
Task Order Number/ Study Number	1 Year	NCTIP-33
Current Task Order Budget (# of Years)		\$82,948.00
Actual Expenditure to Date Against Current Task Order		\$46,182.00
% of Current Task Order Budget Expended		55.68%

Quarterly Progress Report

Project Title:	Use of Neural/Dynamic Alg. to Predict Bus Travel Times under Congested Conditions		
RFP Number: 1	NJDOT Research Project Manager: Edward Kondrath, NJDOT		
Task Order Number/Study Number: 44	Principal Investigator: Chien, Steven I-Jy		
Period Starting: 1/1/2002 - 5/31/2003 (Start-End Date of Study)	Period Ending: 12/19/2002		

Task	% of Total	% of Task this quarter	% of Task to date	% of Total Complete
Literature Review	12.5	0	100	12.5
Identify and Visit the Study Site/Route	10	0	100	10
Collect, Analyze and Process the Data Collected from NJ Transit	15	0	80	12
Select Software for Developing the Prediction Models	10	0	100	10
Develop Neural/Dynamic (ND) Prediction Models	15	0	100	15
Refine the Developed ND Model	12.5	5	15	1.875
Test and Evaluate the Developed Model	12.5	5	5	0.625
Final Report and Presentation	12.5	5	15	1.875
Final Report				
TOTAL	100 %			63. %

1. Progress this quarter by task:

1. Bus performance analysis based on existing 6-month data has been conducted. The procedure and MOEs have been identified and generated for providing more information in assisting transit planning and operations. More data are expected for more accurate estimates.
2. Problems and mistakes existing in the raw data have been identified and reported to NJ Transit. This experience can reduce time in processing new data.
3. More variables have been considered when developed the prediction model.
4. Kalman Filtering algorithm has been developed and applied into dynamic prediction the travel time.

2. Proposed activities for next quarter by task:

1. Collect, process, apply new data for June, 2002 ~ December, 2002.
2. Fine tuning the developed prediction model and Kalman filtering algorithm.

3. List of deliverables provided in this quarter by task (product date):

4. Progress on implementation and training activities:

5. Problems/proposed solutions:

6. Budget summary:

Quarterly Progress Report

Total Project Budget (# Years)	1 Year	\$145,047.00
Total Project Expenditure to date		\$89,900.00
% of Total Project Budget Expended		61.98%
Task Order Number/ Study Number	1 Year	44
Current Task Order Budget (# of Years)		\$145,047.00
Actual Expenditure to Date Against Current Task Order		\$89,900.00
% of Current Task Order Budget Expended		61.98%